Column 448

Canada's boreal: a landscape of opportunity

by Sarah Locke

In summer it pulses with life as more than a billion birds breed among its forests and wetlands. Its rich carpets of lichens sustain some of the world's greatest herds of caribou. Its lakes hold as much as half of the world's unfrozen freshwater.

Draped across the country like a luxuriant green scarf, Canada's boreal region is one of the Earth's largest intact ecosystems; and to one Yukon scientist, it is also a "landscape of opportunity" where we have a uniquely Canadian chance to do things differently.

A new approach to conservation planning is being recommended for Canada's vast boreal region. (photo: Fiona Schmiegelow)

Fiona Schmiegelow, a University of Alberta professor now living in the Yukon, is the lead scientist on a new approach to conservation planning dubbed the reverse-matrix model, which is tailor-made for the vast sweep of the boreal forest.

Schmiegelow says that most conservation planning has focussed on ecosystems that were already in crisis, "landscapes of regret" where no one worried about conserving wildlife and ecosystems until it was too late.

This is not the case with Canada's boreal regions where "we can manage for abundance instead of scarcity," she says. Schmiegelow is working with the Canadian BEACONs Project, which stands for Boreal Ecosystems Analysis for Conservation Networks.

More than 70 percent of Canada's boreal and taiga forest regions remain as "frontier forests," intact landscapes which are likely to survive indefinitely -- if they are left alone. Canada is home to one quarter of the world's remaining frontier forests, and the Yukon -- at 88 per cent -- has a higher proportion of healthy forest ecosystems than any other jurisdiction in Canada.

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Even a few decades ago, the vast majority of people did not worry much about activities such as draining wetlands and clear-cutting vast areas of forest. Once people started to notice that these activities were causing problems, it was too late for anything but crisis management.

"Conservation science was faced with species pushed to the brink of extinction and ecosystems on the edge of collapse, so it focussed on fine-scale intervention and restoration," she explains. "Most conservation planning has focussed on rewilding."

She points out that existing American and Canadian legislation, from the U.S. Endangered Species Act to Canada's Species at Risk Act, reflect this rear-guard mindset.

"We were left saying, 'Oh boy we have major problems! How are we going to deal with them?'"

More than 80 percent of the Earth's surface has already been disturbed, meaning directly influenced by humans. In such regions, managers and scientists end up asking "how much is enough" as they try to determine the minimum amount of land needed to protect carnivores such as grizzly bears and wolverines, and other wide-ranging species.

In the typical conservation science model, nodes of protected areas, such as parks or refuges, are linked by linear corridors to assist the movement of species. The rest of the surrounding landscape -- the matrix -- is basically up for grabs -- a degraded area where conservation plays second fiddle to other activities.

Schmiegelow describes this as "islands of habitat embedded in a sea of non-habitat," and says it makes no sense in a place like the Canadian boreal where the majority of landscapes are still healthy. She poses a different question for this part of the world: "How much development is too much?"

The reverse-matrix model calls for nodes of development-places where industrial activity occurs -- surrounded by a sea of healthy boreal forest. With careful management, development activities would not erode conservation lands. Not only would an ecosystem's full range of species have enough habitat to survive, there would be room for natural processes like fire and insect outbreaks, as

well as many non-industrial human uses.

Schmiegelow emphasizes that the key to the reverse-matrix approach is thinking about protected areas and management in tandem. She describes the science of conservation and the science of resource management typically acting as "two ships passing in the night," which does not lead to integrated planning.

Canada has about one-quarter of the world's remaining frontier forests.

A pro-active approach like the reverse matrix would still allow plenty of room for healthy communities and sustainable development, says Schmiegelow. The key would be monitoring these activities against natural areas which would serve as ecological benchmarks.

Many countries are struggling to protect the remaining scraps of their healthy ecosystems. Conservationists here are urging Canada to set its aim much higher, both by protecting as much as 50 percent of the boreal forest, while there is still a chance, and by leading the way on sustainable development practices.

While this new approach to conservation planning might sound utopian to sceptics, there are already Canadian precedents for conservation on this scale. Both the Deh-Cho of the Northwest Territories and the Innu of Labrador are protecting as much as 60 percent of their traditional lands.

As more than 50 percent of Canada's intact forests are in areas where land claims have already been settled, Schmiegelow says "there is a window of opportunity in the North; there is an opportunity to plan to maintain the full range of ecological and cultural values from the start.

"The further down the line we go in terms of resource allocation -- things like forest tenure and mining rights -- the more difficult the process becomes. We can anticipate development issues arising, and we already know we have communities that will depend on resources use; so we have the chance to be proactive, and that is a very different approach.

"We have an incredible opportunity in northern Canada to avoid that crisis mode," she adds.

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